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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,564	04/03/2001	Stephen J. Watson	124-842	9707

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NIXON & VANDERHYE, PC
1100 N GLEBE ROAD
8TH FLOOR
ARLINGTON, VA 22201-4714

EXAMINER	
MILORD, MARCEAU	
ART UNIT	**PAPER NUMBER**
2682	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/824,564	Applicant(s) WATSON ET AL	
	Examiner Marceau Milord	Art Unit 2682	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1,3-14 and 16-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-14 and 16-18* is/are allowed.

6)☒ Claim(s) *1,3-11,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-11, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al (US Patent No 6157681) in view of Windyka (US Patent No 5592179) and Gandy (GB 2196211).

Regarding claims 1, Daniel et al discloses a method of reading information from a signal transmitted by a transmitter (18 of fig. 2), said method comprising the steps of: providing a phased array antenna (10 of fig. 1; col. 2, lines 35-66); adjusting said phased array antenna to receive said signal (col. 1, lines 16-32; col. 6, line 50- col. 7, line 24).

However, Daniel et al does not specifically disclose the steps of using a phased array antenna to determine a direction of incidence of a signal on a phased array antenna; and electronically steering said phase array antenna toward said signal; and reading information from said received signal.

On the other hand, Windyka, from the same field of endeavor, discloses a phase array antenna for use with a frequency-hopping transmitter that includes a plurality of elemental antennas, each associated with a phase-shifter, which is controlled to form a beam in the desired direction at a base frequency. The antenna elements are formed into sub-arrays each of which is fed from a common port. Furthermore, Windyka shows in figure 5, an antenna beam correction controller, which is coupled to the additional phase shifters and to the source for generating beam direction correction signals in response to the frequency indicative control signals, for generating a group phase shift of the RF signals, which tends to offset the deviations of the beam from the desired direction. In addition, the antenna beam correction controller is coupled to the beam direction control signal generator for adjusting the amount of group phase shift in response to the phase shift commanded. The correction phase shifters are controlled at each frequency hop (figs. 3-5; col. 2, lines 19-61; col. 3, line 36-67; col. 6, line 8- col. 7, line 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Windyka to the system of Daniel in order to determine the direction of incidence on a phase array antenna and adjust this phase array antenna for the purpose of receiving the strongest incident signal.

Gandy also discloses a mobile television camera that is fitted with an array of antennae to transmit a video signal to a fixed receiver. At the receiver the signal from each antenna is detected, the signal strength is measured, and the degree of multipath distortion is measure. The antennae giving the best signal in terms of both signal strength and degree of multipath distortion is determined. A control signal is transmitted back to the mobile camera over a separate radio link to select the antenna giving the best signal to transmit the next video field (page 1, lines 5-

119; page 2, line 28-129). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Gandy to the modified system of Windyka and Daniel in order to determine the direction of incidence on a phase array antenna and adjust this phase array antenna for the purpose of receiving the strongest incident signal.

Regarding claims 3-4, Daniel et al as applied to claim 1 above differ from claims 3-4 in the present invention, in that Daniel fails to disclose the steps of using said phased array antenna to determine a direction of incidence of a strongest of said signals on said phased array antenna, and electronically steering said phased array antenna to receive said strongest incident signal; using said phased array antenna to determine a direction of incidence of a highest quality of said signals on said phased array antenna; and electronically steering said phased array antenna to receive the incident signal of the highest quality.

However, Windyka discloses a phase array antenna for use with a frequency-hopping transmitter that includes a plurality of elemental antennas, each associated with a phase-shifter, which is controlled to form a beam in the desired direction at a base frequency. The antenna elements are formed into sub-arrays each of which is fed from a common port. Furthermore, Windyka shows in figure 5, an antenna beam correction controller, which is coupled to the additional phase shifters and to the source for generating beam direction correction signals in response to the frequency indicative control signals, for generating a group phase shift of the RF signals, which tends to offset the deviations of the beam from the desired direction. In addition, the antenna beam correction controller is coupled to the beam direction control signal generator for adjusting the amount of group phase shift in response to the phase shift commanded. The correction phase shifters are controlled at each frequency hop (figs. 3-5; col. 2, lines 19-61; col.

3, line 36-67; col. 6, line 8- col. 7, line 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Windyka to the system of Daniel in order to determine the direction of incidence on a phase array antenna and adjust this phase array antenna for the purpose of receiving the strongest incident signal.

Claim 5 contains similar limitations addressed in claims 3-4, and therefore is rejected under a similar rationale.

Regarding claim 6, Daniel et al as modified discloses a method of reading information from a signal transmitted by a transmitter (18 of fig. 2), wherein said signal is comprised of an information carrying period and a non-information carrying period, and said steps of tracking and steering are performed substantially during said non information carrying period of said signal (col. 5, lines 26-60; col. 7, lines 20-65).

Regarding claim 7, Daniel et al as modified discloses a method of reading information from a signal transmitted by a transmitter (18 of fig. 2), wherein said step of providing a phased array antenna comprises the step of providing an LC phased array antenna (col. 2, line 44- col. 3, line 61).

Regarding claim 8, Daniel et al as modified discloses a method of reading information from a signal transmitted by a transmitter (18 of fig. 2), wherein said signal transmitted by said transmitter comprises a frequency modulated video signal, and said adjusting step includes receiving said frequency modulated video signal (col. 6, line 50- col. 7, line 24).

Regarding claim 9, Daniel et al as modified discloses a method of reading information from a signal transmitted by a transmitter (18 of fig. 2), wherein said frequency modulated video

signal has a frequency in the range of 12.2GHz to 12.5GHz (col. 1, lines 34-34; col. 2, lines 44-66; col. 6, line 50- col. 7, line 15).

Regarding claim 10, Daniel et al discloses a method of reading information from a transmitter (18 of fig. 2), said transmitter transmitting a signal, said method comprising the steps of: providing a phased array antenna (10 of fig. 1; col. 2, lines 35-66); electronically steering said phased array antenna to concurrently receive a signal transmitted by said transmitter (fig. 2, fig. 6 and fig. 8; col. 6, line 50- col. 7, line 24; it could be several transmitters).

However, Daniel et al does not specifically disclose the step of reading information from two received signals, two transmitters transmitting a frequency modulated analog video signal, electronically steering said phased array antenna to concurrently receive a signal transmitted by said transmitter.

On the other hand, Windyka, from the same field of endeavor, discloses a phase array antenna for use with a frequency-hopping transmitter that includes a plurality of elemental antennas, each associated with a phase-shifter, which is controlled to form a beam in the desired direction at a base frequency. The antenna elements are formed into sub-arrays each of which is fed from a common port. Furthermore, Windyka shows in figure 5, an antenna beam correction controller, which is coupled to the additional phase shifters and to the source for generating beam direction correction signals in response to the frequency indicative control signals, for generating a group phase shift of the RF signals, which tends to offset the deviations of the beam from the desired direction. In addition, the antenna beam correction controller is coupled to the beam direction control signal generator for adjusting the amount of group phase shift in response to the

phase shift commanded. The correction phase shifters are controlled at each frequency hop (figs. 3-5; col. 2, lines 19-61; col. 3, line 36-67; col. 6, line 8- col. 7, line 11).

Gandy also discloses a mobile television camera that is fitted with an array of antennae to transmit a video signal to a fixed receiver. At the receiver the signal from each antenna is detected, the signal strength is measured, and the degree of multipath distortion is measure. The antennae giving the best signal in terms of both signal strength and degree of multipath distortion is determined. A control signal is transmitted back to the mobile camera over a separate radio link to select the antenna giving the best signal to transmit the next video field (page 1, lines 5-119; page 2, line 28-129). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Gandy to the modified system of Windyka and Daniel in order to determine the direction of incidence on a phase array antenna and adjust this phase array antenna for the purpose of receiving the strongest incident signal.

Regarding claim 11, Daniel et al discloses a method of reading information from at least two signals transmitted by a transmitter (18 of fig. 2), said method comprising the steps of; providing a phased array antenna (10 of fig. 1; col. 2, lines 35-66; fig. 2, fig. 6 and fig. 8; col. 6, line 50- col. 7, line 24).

However, Daniel et al does not specifically disclose the step of reading information from two received signals, two frequency modulated analog video signals transmitted by a transmitter, electronically steering said phased array antenna to concurrently receive said at least two signals.

On the other hand, Windyka, from the same field of endeavor, discloses a phase array antenna for use with a frequency-hopping transmitter that includes a plurality of elemental antennas, each associated with a phase-shifter, which is controlled to form a beam in the desired

direction at a base frequency. The antenna elements are formed into sub-arrays each of which is fed from a common port. Furthermore, Windyka shows in figure 5, an antenna beam correction controller, which is coupled to the additional phase shifters and to the source for generating beam direction correction signals in response to the frequency indicative control signals, for generating a group phase shift of the RF signals, which tends to offset the deviations of the beam from the desired direction. In addition, the antenna beam correction controller is coupled to the beam direction control signal generator for adjusting the amount of group phase shift in response to the phase shift commanded. The correction phase shifters are controlled at each frequency hop (figs. 3-5; col. 2, lines 19-61; col. 3, line 36-67; col. 6, line 8- col. 7, line 11).

Gandy also discloses a mobile television camera that is fitted with an array of antennae to transmit a video signal to a fixed receiver. At the receiver the signal from each antenna is detected, the signal strength is measured, and the degree of multipath distortion is measure. The antennae giving the best signal in terms of both signal strength and degree of multipath distortion is determined. A control signal is transmitted back to the mobile camera over a separate radio link to select the antenna giving the best signal to transmit the next video field (page 1, lines 5-119; page 2, line 28-129). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Gandy to the modified system of Windyka and Daniel in order to determine the direction of incidence on a phase array antenna and adjust this phase array antenna for the purpose of receiving the strongest incident signal.

Claims 19-20 contain similar limitations addressed in claims 1, 10-11, and therefore are rejected under a similar rationale.

Allowable Subject Matter

3. Claims 12-14, 16-18 are allowed.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 3-11, 19-20 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 703-306-3023. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 703-308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MARCEAU MILORD

Marceau Milord
Examiner

MARCEAU MILORD
PRIMARY EXAMINER

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PRIMARY EXAMINER

Art Unit 2682